

# Case that could be misleading in the diagnostic process: Differentiating between DISH and AS

Tanı sürecinde yanıltıcı olabilecek bir olgu: DISH ve AS arasındaki ayırım

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**Keywords:** DISH, axSpA, spinal hyperostosis, sacroiliac joint

**Anahtar Kelimeler:** DISH, axSpA, omurga hiperostozu, sakroiliak eklem

## Dear Editor,

Although its etiology is largely unknown, the prevalence of diffuse idiopathic skeletal hyperostosis (DISH), which has been closely associated with obesity, diabetes, cardiovascular diseases, and metabolic syndrome, ranges from 2.9% to 27%. The differential diagnosis of DISH and spondyloarthropathy should be made carefully because of enthesal new bone formation in the spinal and peripheral regions, frequent involvement of the lower part of the thoracic spine and the upper part of the lumbar spine, and similar radiographic findings.<sup>[1]</sup>

The confusion between DISH and ankylosing spondylitis (AS) stems from overlapping clinical symptoms and radiologic findings. Both conditions predominantly affect the axial skeleton, causing spinal stiffness, reduced mobility, and postural abnormalities. In addition, they can present with similar symptoms such as chronic back pain, and morning stiffness, which can lead to confusion in the diagnostic process.

Moreover, the radiographic features of DISH, such as ossifications running along the anterior aspect of the vertebral bodies, sacroiliac joint involvement, and ligamentous ossification, can closely mimic the characteristic findings

observed in AS, such as syndesmophytes, sacroiliitis and bamboo spine appearance. This radiologic similarity may lead to misinterpretation or misdiagnosis, especially when patients exhibit atypical clinical features.<sup>[2]</sup>

The aim of this paper is to underline the difficulty in the differential diagnosis process between DISH and AS due to common clinical features and radiologic findings. Clinical suspicion combined with advanced imaging techniques and a thorough understanding of the unique features of each condition is essential to ensure accurate diagnosis and appropriate management strategies.

## Case

A 62-year-old male patient presented to our outpatient clinic with complaints of persistent hip, back, and lower back pain, which started one year ago. He reported morning stiffness lasting slightly more than 30 minutes and worsening with physical activity. He stated that his complaints partially decreased with the use of non-steroidal anti-inflammatory drugs. There is no description of pain that wakes him up from sleep at night. He also did not report a history of trauma. His medical history included hypertension, diabetes mellitus, dyslipidemia, and obstructive sleep apnea syndrome.

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Received / Giriş Tarihi: 18.04.2024 Accepted / Kabul Tarihi: 01.07.2024

**Cite this article as / Atıf:** Bıçılıoğlu C, Özbek İC. Case that could be misleading in the diagnostic process: Differentiating between dish and AS.

Ulus Romatol Derg. 2024;16(3):141-143



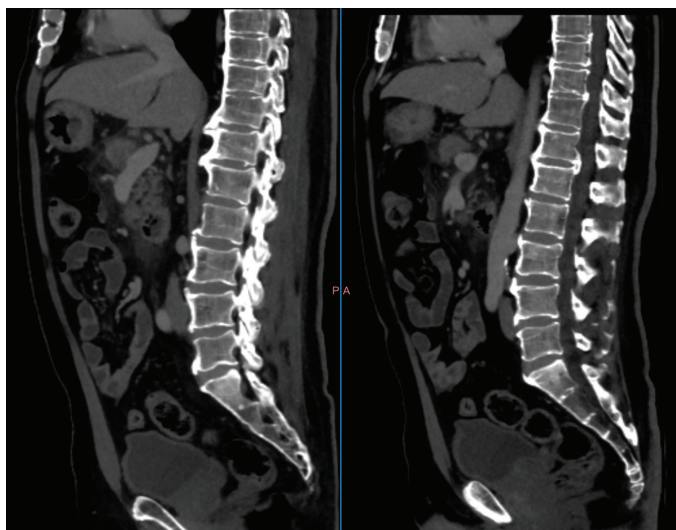
The patient stated that he had been on anti-tumor necrosis factor (TNF) therapy for the past 6 months, but there had been no improvement in symptoms.

During the physical examination, active movements of the lumbar and thoracic spine were painful and limited at the end of the range of motion. The modified Schober test was negative, and chest expansion was normal. The patient did not report pain in the sacroiliac joint region during bilateral Gaenslen and Patrick-FABER tests. No neurological deficits or pathological reflexes were detected.

Serum C-reactive protein, tumor markers, thyroid, liver and kidney function tests, erythrocyte sedimentation rate and complete blood count were among the laboratory tests showing results within normal ranges.



**Figure 1.** Bridging ossification is seen at the anterior and superior aspects of the sacroiliac joints in this CT scan  
CT: Computed tomography



**Figure 2.** A) Ossification along the anterior longitudinal ligament of the thoracolumbar vertebrae with relatively preserved disc spaces. B) Ossification along the posterior longitudinal ligament of the thoracolumbar vertebrae with relatively preserved disc spaces

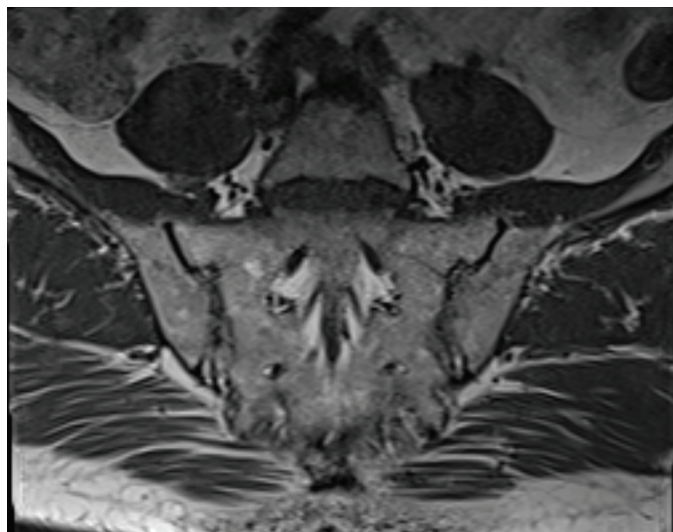
Review of the thoracolumbar two-way spine X-ray and computed tomography previously taken at an external center revealed osteophytes forming a bridge anterior to the sacroiliac joint (Figure 1) and bony protrusions associated with mild to moderate degenerative changes at the vertebral level (Figure 2).

Following our request, lumbar vertebra and sacroiliac joint magnetic resonance imaging (MRI) examinations were performed. MRI of the sacroiliac joints did not show signs of active sacroiliitis in both sacroiliac joints and on the iliac and sacral surfaces forming the joint. Bilateral sacroiliac joint distance was reduced, particularly in the anterior aspect, with a mild appearance of fusion in the anterior aspect (Figure 3). The lumbar vertebra MRI did not reveal any inflammatory findings but showed osteophytic protrusions at multiple levels of the anterior vertebral bodies.

As a result of the evaluations, the patient was diagnosed with DISH. The anti-TNF therapy was discontinued, and the patient was included in a physical therapy program at our clinic.

Research indicates that DISH is characterized by enthesopathy of the sacroiliac joint capsule and anterior and posterior ligaments, as well as bridging and fusing enthesophytes inside the joints, which imitate the joint ankylosis of AS.<sup>[3]</sup> As in our patient, sacroiliac joint changes accompanying changes at the vertebral level were observed on tomography. MRI was needed to support our diagnosis radiologically.

For the clinical examination of symptomatic, painful, or post-traumatized DISH patients, MRI is now the suggested imaging modality. When other imaging modalities are



**Figure 3.** Bridging ossification is seen at the anterior and superior aspects of the sacroiliac joints in this MRI  
MRI: Magnetic resonance imaging

ineffective, MRI can aid in the distinction between DISH and AS. Determining a relationship between DISH imaging characteristics and clinical findings could help in the early diagnosis of DISH.<sup>[4]</sup>

### Conclusion

In conclusion, we believe that a careful evaluation of clinical, laboratory, and imaging findings, as demonstrated in our case, will shed light on the differential diagnosis process.

### Footnotes

**Conflict of Interest:** No conflict of interest was declared by the authors.

**Financial Disclosure:** The authors declared that they received no financial support.

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